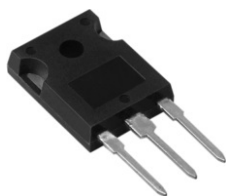
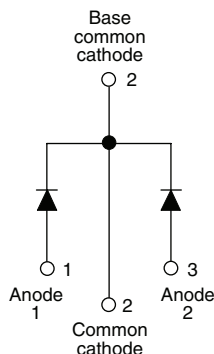


Schottky Rectifier, 2 x 15 A



TO-247AC



FEATURES

- 175 °C T_J operation
- Center tap TO-247 package
- Low forward voltage drop
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Lead (Pb)-free ("PbF" suffix)
- Designed and qualified for industrial level



RoHS*
COMPLIANT

PRODUCT SUMMARY

$I_{F(AV)}$	2 x 15 A
V_R	80 to 100 V

DESCRIPTION

The 30CPQ...GPbF center tap Schottky rectifier has been optimized for low reverse leakage at high temperature. The proprietary barrier technology allows for reliable operation up to 175 °C junction temperature. Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Rectangular waveform	30	A
V_{RRM}		80 to 100	V
I_{FSM}	$t_p = 5 \mu s$ sine	920	A
V_F	15 Apk, $T_J = 125^\circ C$ (per leg)	0.67	V
T_J		- 55 to 175	$^\circ C$

VOLTAGE RATINGS

PARAMETER	SYMBOL	30CPQ080GPbF	30CPQ090GPbF	30CPQ100GPbF	UNITS
Maximum DC reverse voltage	V_R	80	90	100	V
Maximum working peak reverse voltage	V_{RWM}				

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum average forward current See fig. 5	I _{F(AV)}	50 % duty cycle at T _C = 140 °C, rectangular waveform		30	A
Maximum peak one cycle non-repetitive surge current per leg See fig. 7	I _{FSM}	5 μs sine or 3 μs rect. pulse	Following any rated load condition and with rated V _{RRM} applied	920	
		10 ms sine or 6 ms rect. pulse		240	
Non-repetitive avalanche energy per leg	E _{AS}	T _J = 25 °C, I _{AS} = 0.50 A, L = 60 mH		7.50	mJ
Repetitive avalanche current per leg	I _{AR}	Current decaying linearly to zero in 1 μs Frequency limited by T _J maximum V _A = 1.5 x V _R typical		0.50	A

* Pb containing terminations are not RoHS compliant, exemptions may apply

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop per leg See fig. 1	$V_{FM}^{(1)}$	15 A	$T_J = 25\text{ }^{\circ}\text{C}$	0.86	V
		30 A		1.05	
		15 A	$T_J = 125\text{ }^{\circ}\text{C}$	0.67	
		30 A		0.81	
Maximum reverse leakage current per leg See fig. 2	$I_{RM}^{(1)}$	$T_J = 25\text{ }^{\circ}\text{C}$	$V_R = \text{Rated } V_R$	0.28	mA
		$T_J = 125\text{ }^{\circ}\text{C}$		7	
Maximum junction capacitance per leg	C_T	$V_R = 5\text{ }V_{DC}$ (test signal range 100 kHz to 1 MHz) $25\text{ }^{\circ}\text{C}$		500	pF
Typical series inductance per leg	L_S	Measured lead to lead 5 mm from package body		7.5	nH
Maximum voltage rate of change	dV/dt	Rated V_R		10 000	V/ μ s

Note

(1) Pulse width < 300 μ s, duty cycle < 2 %

THERMAL - MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	T _J , T _{Stg}		- 55 to 175	°C
Maximum thermal resistance, junction to case per leg	R _{thJC}	DC operation See fig. 4	2.20	°C/W
Maximum thermal resistance, junction to case per package		DC operation	1.10	
Typical thermal resistance, case to heatsink	R _{thCS}	Mounting surface, smooth and greased	0.24	
Approximate weight			6	g
			0.21	oz.
Mounting torque	minimum	Non-lubricated threads	6 (5)	kgf · cm (lbf · in)
	maximum		12 (10)	
Marking device		Case style TO-247AC (JEDEC)	30CPQ080G	
			30CPQ090G	
			30CPQ100G	

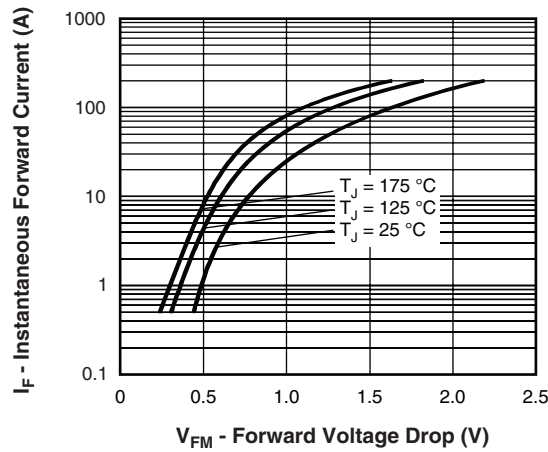


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

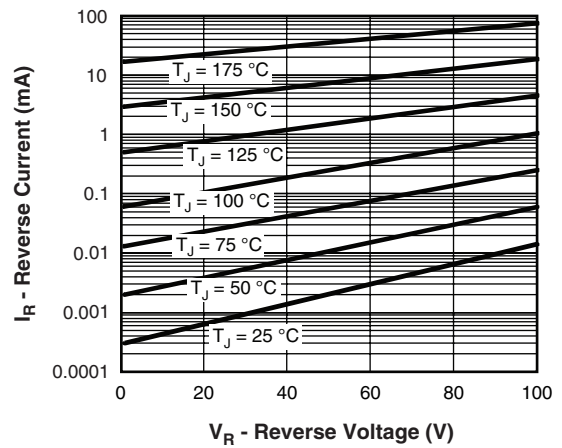


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

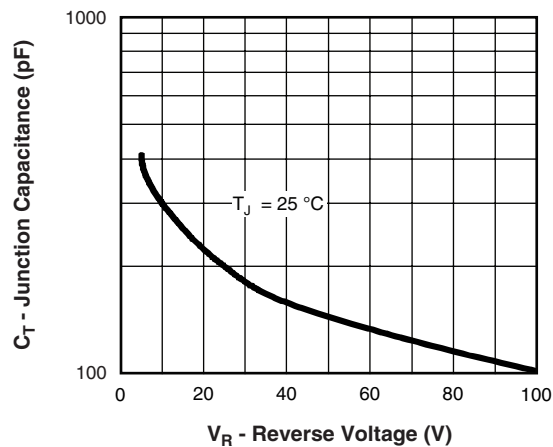


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

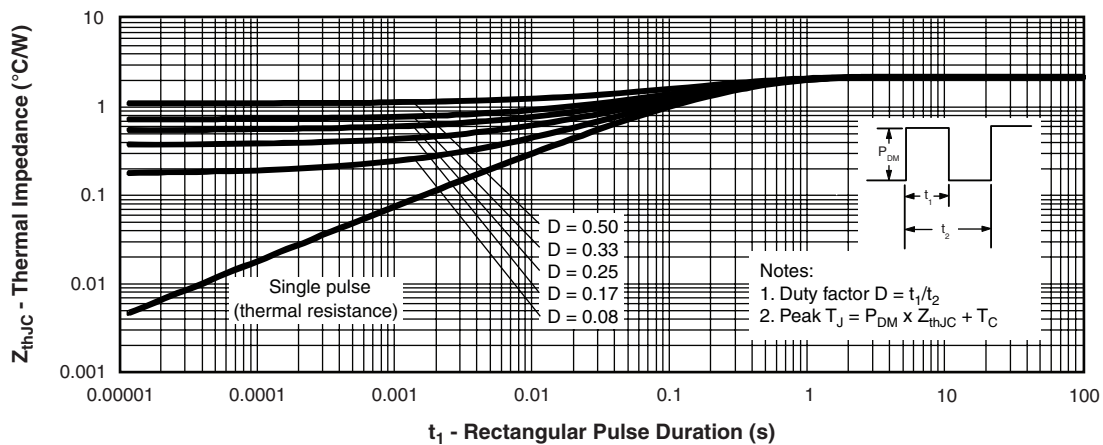


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

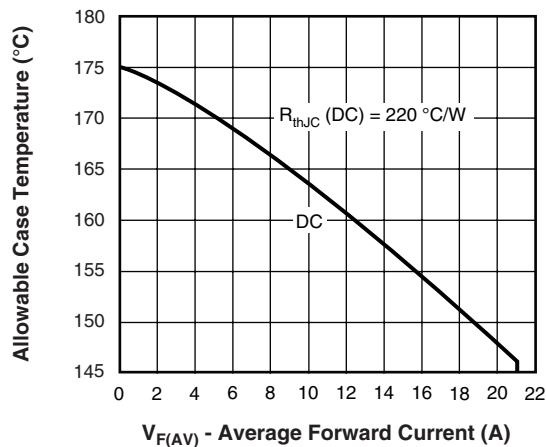


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current (Per Leg)

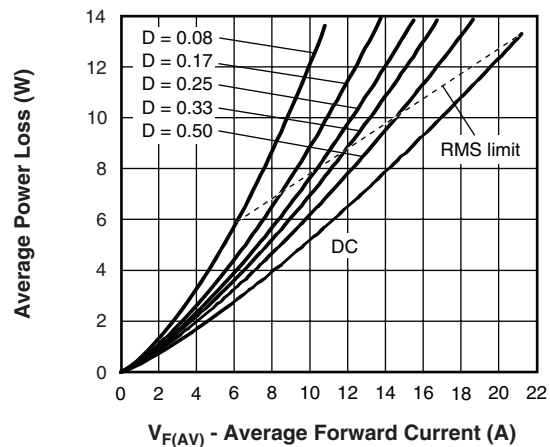


Fig. 6 - Forward Power Loss Characteristics (Per Leg)

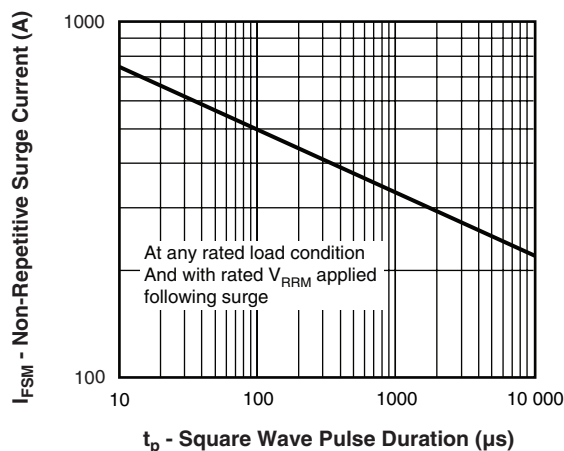


Fig. 7 - Maximum Non-Repetitive Surge Current (Per Leg)

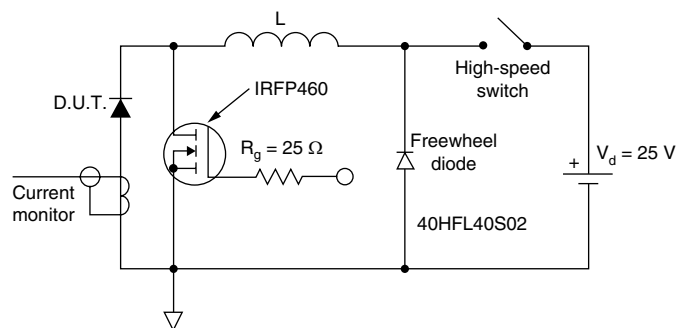


Fig. 8 - Unclamped Inductive Test Circuit



30CPQ080GPbF/30CPQ090GPbF/30CPQ100GPbF

Schottky Rectifier, 2 x 15 A Vishay High Power Products

ORDERING INFORMATION TABLE

Device code	30	C	P	Q	100	G	PbF
	1	2	3	4	5	6	7

- | | | | |
|----------|---|--|---|
| 1 | - | Current rating | |
| 2 | - | Circuit configuration: | |
| | | C = Common cathode | |
| 3 | - | Package: | |
| | | P = TO-247 | |
| 4 | - | Schottky "Q" series | |
| 5 | - | Voltage code | 080 = 80 V
090 = 90 V
100 = 100 V |
| 6 | - | G = Schottky generation | |
| 7 | - | • None = Standard production
• PbF = Lead (Pb)-free | |

Tube standard pack quantity: 25 pieces

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95223
Part marking information	http://www.vishay.com/doc?95226



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